



UCSC

University of Colombo, Sri Lanka

University of Colombo School of Computing



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY
(EXTERNAL)**

Academic Year 2024— 1st Year Examination — Semester 2

IT2406 — Web Application Development I

Multiple Choice Question Paper
(2 Hours)

Important Instructions

- The duration of the paper is **2 Hours**.
- The medium of instructions and questions is English.
- This paper has **40 questions** on **12 pages**. Answer **all** questions.
- All questions are of the **MCQ** (Multiple Choice Questions) type.
- Each question will have **5 (five)** choices with **ONE OR MORE** correct answers.
- This paper consists of 100 marks and all the questions will carry equal marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from -1 (All the incorrect choices are marked & no correct choices are marked) to +1 (All the correct choices are marked & no incorrect choices are marked). However, **the minimum mark per question would be zero**.
- Answers should be marked on the **special answer sheet** provided.
- Note that questions appear on both sides of the paper. If a page or part of a page is not printed, please inform the supervisor/invigilator immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**
- Any electronic device capable of storing and retrieving text, including electronic dictionaries, smartwatches, and mobile phones, is not allowed.
- Calculators are **not** allowed.
- *All Rights Reserved.* This question paper can NOT be used without proper permission from the University of Colombo School of Computing.

1) Which of the following HTML code(s) is/are correct regarding the "href" attribute?

- (a) ``
- (b) `<a href.=application.pdf>`
- (c) ``
- (d) ``
- (e) ``

2) Which of the following HTML code segment(s) is/are correct regarding the image mapping?

- (a) `<area shape="circle" coords="8,38,20" href="item.html" alt=item >`
- (b) `<area shape="poly" coords="8,38,87,63" href="http://www.yahoo.com" alt=yahoo >`
- (c) `<area shape="rectangular" coords="8,38,87,63" href="people.html" alt=people>`
- (d) `<area shape="polygon" coords="8,38,8,63,2,4,5,8,10" href="https://www.google.com">`
- (e) `<area shape="cir" coords="8,38,20" href="home.html" alt=home>`

3) Select the correct description for the following HTML tag.

- (a) `<q>` - Defines a short inline quotation
- (b) `<cite>` - Defines the title of a work
- (c) `<blockquote>` - Defines the text direction
- (d) `<bdo>` - Defines a section that is quoted from another source
- (e) `<abbr>` - Defines an abbreviation or acronym

4) What would be the output of the following HTML code?

`<bdo dir="rtl">Time flies so fast.</bdo>`

- (a) Time flies so fast.
- (b) .tsaf os seilf emiT
- (c) Time Flies So Fast.
- (d) .tsaF oS seilF emiT
- (e) .Tsaf Os Seilf Emit

5) Select the correct code that produces the following output.

Expected Output:

Tuesday is the 20th of May, 2025.

- (a) ` <u>Tuesday</u> is the <strike>20_{th}</strike> 20th of May, <i>2025</i> .`

(b) ` <i>Tuesday</i> is the <strike>20_{th}</strike> 20_{th} of May, <u>2025</u> .`

(c) ` <i>Tuesday</i> is the <u>20_{th}</u> <strike>20th of May, </strike>2025</u> .`

(d) ` <i>Tuesday</i> is the <strike>20_{th}</strike> 20th of May, <u>2025</u> .`

(e) `<u> Tuesday<i> is the <strike>20th</strike> 20_{th} of May, </i>2025</u> .`

6) The following is an HTML code snippet with blanks labeled “1 to 7” and the expected output.

HTML Code:

```
<ol> <li>A</li> [-1-] <li>A 1</li> [-2-] <li>B 1</li> <li>B 2</li>
[-3-] <li> A 2</li> [-4-] <li>C</li> [-5-] <li> D </li> <li>E</li> [-6-]
<li>F</li> [-7-]
```

Expected Output:

```
1. A
   i. A 1
      • B 1
      • B 2
   ii. A 2
2. C
   f. D
   g. E
3. F
```

The correct order of tokens for filling the above blanks is

- (a) `<ol type="A">,<ul type="disc">,,,
<ol type="a" start="6">,,`

(b) `<ol type="i">,<ul type="i">,,,
<ol type="a" start="6">,,`

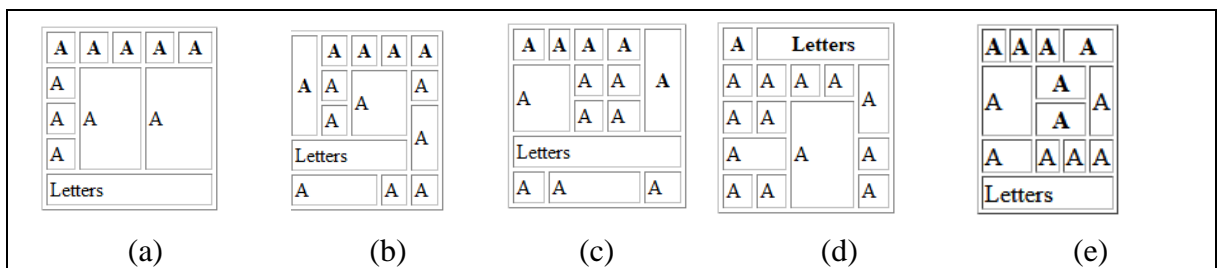
(c) `<ol type="i">,<ul type="disc">,,,
<ol type="a" start="6">,,`

(d) `<ol type="i">,<ul type="disc">,,,
<ul type="a" start="f">,,`

(e) `<ol type="i">,<ul type="disc">,,,
<ol type="a" start="6">,,`

7) What would be the output of the following HTML code?

```
<table border="1"> <tfoot> <td colspan="5">Letters</tfoot>
<tbody> <tr> <td colspan="2" rowspan="2">A</td>
    <th colspan="2">A</th> <td rowspan="2">A</td> </tr>
    <tr> <th colspan="2">A</th> </tr> <tr> <td colspan="2">A</td>
    <td>A</td> <td>A</td> <td>A</td> </tr> </tbody>
<thead> <tr> <th>A</th> <th>A</th> <th>A</th>
<th colspan="2">A</th> </tr> </thead></table>
```



8) Consider the following folder structure given below. Which of the following HTML code(s) is correct to embed the “b.gif” image into the “index.html” page?

Folder Structure:

```
C:/E/F/G/index.html
C:/A/B/C/D/b.gif
```

- | | |
|---------------------------------------|------------------------------------|
| (a) | (b) |
| (c) | (e) |
| (d) " | |

State whether the following parts of the HTML codes are syntactically correct in questions 09 to 11.

9)

- I. <head> <base_target="_self"> </head> <body>
 page03 </body>
- II. <frameset rows = "200","600" > <frameset
 columns =120,600 > < name=main> </frameset>
 </frameset>
- III. <body topmargin="0" leftmargin="10" rightmargin="0"
 bgcolor = "#aaccbb">

- | | | |
|--------------------|------------------------|---------------------|
| (a) I Only | (b) I and II Only | (c) II and III Only |
| (d) I and III Only | (e) All, I, II and III | |

- 10) I. `<video width="320" height="240" controls> <link href="a.avi" type="video" /> - - </video>`
 II. `<marquee direction = "right">University of Colombo</marquee> <hr width="70%" align="left" />`
 III. `<input type="number" name="points" min="0" max="100" step="10" value="30"> <input type="date" name="bday" max="1979-12-31">`

(a) I Only	(b) I and II Only	(c) II and III Only
(d) I and III Only	(e) All I, II and III	

- 11) I. `<body bgcolor="#ee3322"> <bgsound src="sound.wav">`
 II. `<figcaption> <figure> Fig.1</figcaption> </figure>`
 III. `<p><blockquote href ="http://www.abc/index.html"> <q> A</q> </blockquote> </p>`

(a) I Only	(b) I and II Only	(c) II and III Only
(d) I and III Only	(e) All I, II and III	

- 12) State whether the following parts of the HTML and CSS codes are syntactically correct.

- I. `<h1 style="color:#5566cc;font-size:35px"> - - </h1>`
 II. `<h1 style:"color=#5566cc;font-size=35px"> - - </h1>`
 III. `<p style="color:#55ee33; font-size:12px"> - - </p>`

(a) I Only	(b) I and II Only	(c) II and III Only
(d) I and III Only	(e) All I, II and III	

- 13) State whether the following parts of the HTML and CSS codes are syntactically correct.

- I. `h1,h2,h3,p{color:red;font-size:30;font-type:times}`
 II. `<head> <div class="para1"> - - </div> </head>`
 III. `<head> <script>document.createElement("sec")</script> <style> sec{display:block;}</style> </head> <body> <sec> - - </sec> </body>`

(a) I Only	(b) I and II Only	(c) II and III Only
(d) I and III Only	(e) All I, II and III	

14) Which of the following HTML code segments is correct for creating a section link?

- (a) `Introduction-<h1>-</h1>`
- (b) `Introduction-<h1>-</h1>`
- (c) `Introduction-<h1>-</h1>`
- (d) `Introduction-<h1>-</h1>`
- (e) `Introduction-<h1>-</h1> `

15) Which of the following HTML code segment is correct regarding the section link on the another web page?

- (a) `Part A- <h2>-</h2> `
- (b) `Part A- <h2>-</h2> `
- (c) `Part A- <h2>-</h2> `
- (d) `Part A- <h2>-</h2> `
- (e) `Part A- <h2>-</h2> `

16) Which of the following HTML code segments is correct regarding the pull-down menu to display multiple items (Selection list option)?

- (a) `<option name="city" multiple value="3"> <option> Kandy</option> </select>`
- (b) `<select name="city" size="3"> <option>Kandy </option></select>`
- (c) `<select name="city" multiple size="3"> <option>Kandy</option> </select>`
- (d) `<select name="city" multiple-size="3"> <option>Kandy</option> </select>`
- (e) `<option name="city" multiple size="3"> <select>Kandy</select> </option>`

17) What would be the output of the following HTML and CSS code?

```
<html><head><style>
  div + p {border-style: solid; width: 60px; height: 20px;
padding:1;}
</style></head><body>
  <div> <p>Apple.</p> <p>Orange</p></div>
      <p>Banana</p> <p>Papaya</p>
</body></html>
```

Indent

Apple.	Apple.	Apple.	Apple.	Apple.
Orange	Orange	Orange	Orange	Orange
Banana	Banana	Banana	Banana	Banana
Papaya	Papaya	Papaya	Papaya	Papaya
(a)	(b)	(c)	(d)	(e)

State whether the following parts of the CSS pre-processor code are syntactically correct in questions 18 to 20.

18)

- I. `.large-heading{"font-weight:bold;font-size:24px; color:#ccc";}`
`.med-heading {"large-heading;font-size:18px";}`
- II. `.large-heading {font-weight:bold;font-size:24px;color:#ccc;}`
`.med-heading {.large-heading;font-size:18px;}`
- III. `.large-heading {font-weight:bold;font-size:24px; color:#ccc;}`
`#med-heading {.large-heading;font-size:18px;}`

- | | | |
|--------------------|-----------------------|---------------------|
| (a) I Only | (b) II Only | (c) II and III Only |
| (d) I and III Only | (e) All I, II and III | |

19)

- I. `$font-stack: Helvetica, sans-serif; $primary-color: #333;`
`body {font: 100% font-stack; color: primary-color;}`
- II. `font-stack: Helvetica, sans-serif; primary-color: #333;`
`body {font: 100% $font-stack; color: $primary-color;}`
- III. `$font-stack: Helvetica, sans-serif; $primary-color: #333;`
`body {font: 100% $font-stack; color: $primary-color;}`

- | | | |
|--------------------|-----------------------|--------------|
| (a) I Only | (b) II Only | (c) III Only |
| (d) I and III Only | (e) All I, II and III | |

- 20) I. @mixin notification {padding:10px;border-radius:5px;}
 .error{include notification; background:red; color:white;}
 II. #mixin notification {padding:10px;border-radius:5px;}
 .error{#include notification; background:red;
 color:white;}
 III. @mixin notification {padding:10px;border-radius:5px;}
 .error{@include notification; background:red;color:white;}

(a) I Only	(b) II Only	(c) III Only
(d) I and III Only	(e) All I, II and III	

- 21) The following is an HTML and JavaScript code snippet with blanks labeled 'A' to 'D'. Select the correct tokens to fill in these blanks.

```
<html><head> <script type = " [-A-] ">
function [-B-]{document.[-C-] ("Hello there!");}
</script></head><body><form>
<input [-D-] = "button" onclick = "[-E-] " value = "Say Hello">
</form></body></html>
```

(a) javascript/text ; sayHello() ; create ; type ; sayHello()
(b) javascript/text ; sayHello() ; sayHello(); creat ; type
(c) text/javascript ; sayHello() ; write ; type ; sayHello()
(d) text/javascript ; sayHello() ; create ; type ; sayHello()
(e) javascript/text ; create ; sayHello() ; type ; sayHello()

- 22) What would be the output of the following HTML and JavaScript code?

```
<html><body><script type = "text/javascript">
var count = 0;
  do {document.write("Count : " + count + "<br/>");
count++;}
while (count < 5);
</script></body></html>
```

Count : 1	Count : 5	Count : 4	Count : 0	Count : 0
Count : 2	Count : 4	Count : 3	Count : 2	Count : 1
Count : 3	Count : 3	Count : 2	Count : 3	Count : 2
Count : 4	Count : 2	Count : 1	Count : 4	Count : 3
Count : 5	Count : 1	Count : 0	Count : 5	Count : 4
(a)	(b)	(c)	(d)	(e)

23) State whether the following statements are **correct** regarding JavaScript operators.

I . == : Checks if the value of two operands are equal or not, if yes, then the condition becomes true.

II . != : Checks if the value of two operands are equal or not, if the values are not equal, then the condition becomes true.

III . <= : Checks if the value of the left operand is less than or equal to the value of the right operand, if yes, then the condition becomes true.

(a) I Only

(b) II Only

(c) III Only

(d) I and III Only

(e) All I, II and III

24) State whether the following statements are correct regarding JavaScript operators.

I . *= : It multiplies the right operand with the left operand and assigns the result to the left operand.

II . /= : It divides the left operand with the right operand and assigns the result to the left operand.

III . Outputs the remainder of an integer division

(a) I Only

(b) II Only

(c) III Only

(d) I and II Only

(e) All I, II and III

25) What would be the output of the following HTML and JavaScript code?

```
<html><body>
  <script type = "text/javascript">
    var a = 10; var b = 20; var linebreak = "<br />";
    document.write("(a != b) => "); result = (a != b);
    document.write(result);
  </script>
</body></html>
```

(a) (a = b) <=true

(b) (a != b) => false

(c) (a != b) <= true

(d) (a != b) => true

(e) (a != b) <=false

- 26) Which of the following **correctly** describes the differences between XML and HTML?
- (a) XML is extensible and allows defining new tags, while HTML has a fixed set of tags

(b) XML defines visual document layout, but HTML defines semantic data structure

(c) XML enforces strict syntax rules while HTML allows flexible use by browsers

(d) XML is designed for both documents and messages, while HTML is focused on webpage presentation

(e) XML uses an outdated character set while HTML uses modern encoding standards
- 27) Which of the following is/are valid XPath axes?
- (a) self:: (b) child:: (c) tag::

(d) sibling:: (e) attribute::
- 28) Which of the following languages is/are part of the Extensible Stylesheet Language (XSL) used for XML processing?
- (a) CSS (b) XSLT (c) HTML

(d) XSL:FT (e) XSL:FO
- 29) What does the XPath expression `foo//bar` select?
- (a) Element "foo"

(b) The Root element

(c) Element "foo" contains child "bar"

(d) Child element "bar" of element "foo"

(e) element "bar" descendant of element "foo"
- 30) Which of the following correctly lists the Bootstrap 3 breakpoint classes in this device order: Desktops, Tablets, Mobile Phones, Larger Desktops?
- (a) md, lg, sm, xs

(b) md, sm, xs, lg

(c) lg, sm, xs, md

(d) sm, md, xs, lg

(e) md, xs, sm, lg
- 31) Which class is used to style input fields in Bootstrap?
- (a) input-field (b) input-style (c) control-input

(d) form-input (e) form-control

32) Which HTML tag and class combination **correctly** display a glyphicon in Bootstrap 3?

- (a) `<i class="glyphicon-star"></i>`
- (b) `<div class="icon-star"></div>`
- (c) ``
- (d) `<i class="icon glyphicon-star"></i>`
- (e) ``

33) Which class creates a large-sized button in Bootstrap?

- (a) `.btn-big`
- (b) `.btn-xl`
- (c) `.btn-lg`
- (d) `.btn-size-lg`
- (e) `.btn-large`

34) Which of the following statement(s) is/are incorrect regarding the `.container` class in Bootstrap?

- (a) `.container` class provides a responsive fixed width container
- (b) `.container` must always be nested inside a `.row` for the layout to work
- (c) `.container-fluid` class provides a full width container, spanning the entire width of the viewport
- (d) `container-sm`, `container-md` classes can be used to create responsive containers
- (e) `.container` applies horizontal padding (gutters) to provide spacing between the edge and content.

35) Which of the following statement(s) is/are **correct** about Bootstrap components?

- I. Badges are used to display counts to highlight an item
- II. Alerts can display contextual messages like warnings and errors
- III. Alerts change their color automatically based on the length of the message

- (a) I Only
- (b) II Only
- (c) III Only
- (d) I and II Only
- (e) I and III Only

36) Which of the following correctly creates a fixed-top navbar compatible with Bootstrap 3?

- (a) `<nav class="nav fixed-top">`
- (b) `<nav class="navbar fixed-top navbar-light">`
- (c) `<nav class="navbar navbar-expand fixed-top">`
- (d) `<nav class="navbar navbar-default navbar-fixed-top">`
- (e) `<nav class="navbar navbar-fixed-top navbar-default">`

37) What is the primary purpose of the package.json file in a Node.js project?

- (a) It provides user authentication
- (b) It is used for writing JavaScript code
- (c) It stores all core modules of Node.js
- (d) It manages application dependencies
- (e) It defines middleware functions for the server

38) What are the three layers of a three-tier web application architecture?

- (a) Data layer, Logic layer, Presentation layer
- (b) Database layer, Server layer, Client layer
- (c) Model layer, View layer, Controller layer
- (d) Frontend layer, Backend layer, Middleware layer
- (e) User layer, System layer, Network layer

39) Which Angular service(s) is/are responsible for mapping URLs to specific views?

- | | | |
|---------------------|---------------------|-------------------|
| (a) \$http | (b) \$location | (c) \$routeParams |
| (d) \$routeProvider | (e) \$stateProvider | |

40) Which code segment enables serving static files from a folder named **public** in Express?

- (a) `static("public")`
- (b) `express.static("public")`
- (c) `app.get(static("public"))`
- (d) `app.use("/public", static())`
- (e) `app.use(express.static("public"))`
